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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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22850	7590	09/16/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			ROE, JESSEE RANDALL	
			ART UNIT	PAPER NUMBER
			1793	
			NOTIFICATION DATE	DELIVERY MODE
			09/16/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/593,338	ODA ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 July 2008 has been entered.

Status of the Claims

Claims 4-9 are pending wherein claims 4-9 are amended and claims 1-3 and 10 are canceled.

Specification

The disclosure is objected to because of the following informalities: The Examiner objects to the specification in that in paragraph [0005] of the specification the Mn content of the applicants' alloy is disclosed as "0.3-3% by mass" yet in Table 1 Example Alloy No. 7 which contains 3.5 weight Mn is described as among "Compositions According to the Present Invention". If the upper disclosed Mn content is 3% it is not understood how Alloy 7 which has a Mn content of 3.5% is considered to be an embodiment of the invention. Clarification of this matter is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In regards to claims 4-9, the instant specification provides support for the range of 0.3 to 3 weight percent manganese and 3.5 weight percent manganese (i.e. [0005] and Table 1). However, the instant specification does not provide support for greater than 3 weight percent to less than 3.5 weight percent manganese as would be included by the scope of instant claims 4-9.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Nishi et al. (US 4,919,736).

In regards to claim 4, Nishi et al. ('736) disclose aluminum alloys having a composition relative to that of the instant invention as shown in the table on the following page (col. 1, lines 58-68 and col. 3, lines 6-14).

Element	From Instant Claims (mass percent)	Nishi et al. ('736) (mass percent)	Overlap (mass percent)
Si	13 – 25	13.5 – 20	13.5 – 20
Cu	2 – 8	6 – 9	6 – 8
Fe	0.5 – 3	1.6 – 3	1.6 – 3
Mn	1 – 3.5	0.5 – 2	1 – 2
P	0.001 – 0.02	0.001 – 0.1	0.001 – 0.02
Ni	0	0 – 0.5	0
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Nishi et al. ('736) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, and nickel for an aluminum alloy from the amounts disclosed by Nishi et al. ('736) because Nishi et al. ('736) disclose the same utility throughout the disclosed ranges.

With respect to the recitation “wherein the total amount of iron and manganese is 3.0% by mass or greater” as in lines 4-5 of claim 4, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, *Takalatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513,

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44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron and manganese would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron and manganese from the aluminum alloys disclosed by Nishi et al. ('736) because Nishi et al. ('736) teach the same utility throughout the disclosed ranges.

With respect to the recitation “said aluminum alloy having a Young’s modulus of 90 GPa or more and a coefficient of linear thermal expansion of $18 \times 10^{-6}/^{\circ}\text{C}$ or less” as recited in lines 5-6 of claim 4, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

In regards to claim 5, Nishi et al. ('736) disclose aluminum alloys having a composition relative to that of the instant invention as shown in the table below (col. 1, lines 58-68 and col. 3, lines 6-14).

Element	From Instant Claims (mass percent)	Nishi et al. ('736) (mass percent)	Overlap (mass percent)
Si	13 – 25	13.5 – 20	13.5 – 20
Cu	2 – 8	6 – 9	6 – 8
Fe	0.5 – 3	1.6 – 3	1.6 – 3
Mn	1 – 3.5	0.5 – 2	1 – 2
P	0.001 – 0.02	0.001 – 0.1	0.001 – 0.02
Ni	0.5 – 6	0 – 0.5	0.5
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Nishi et al. ('736) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the

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art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, and nickel for an aluminum alloy from the amounts disclosed by Nishi et al. ('736) because Nishi et al. ('736) disclose the same utility throughout the disclosed ranges.

With respect to the recitation “wherein the total amount of the combination of iron, manganese, and nickel is 3.0% by mass or greater” as in lines 4-5 of claim 5, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, *Takalatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Nishi et al. ('736) because Nishi et al. ('736) teach the same utility throughout the disclosed ranges.

With respect to the recitation “said aluminum alloy having a Young’s modulus of 90 GPa or more and a coefficient of linear thermal expansion of $18 \times 10^{-6}/^{\circ}\text{C}$ or less” as recited in lines 5-8 of claim 5, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

In regards to claim 6, Nishi et al. ('736) disclose aluminum alloys having a

composition relative to that of the instant invention as shown in the table below (col. 1, lines 58-68, col. 2, lines 58-63 and col. 3, lines 6-14).

Element	From Instant Claims (mass percent)	Nishi et al. ('736) (mass percent)	Overlap (mass percent)
Si	13 – 25	13.5 – 20	13.5 – 20
Cu	2 – 8	6 – 9	6 – 8
Fe	0.5 – 3	1.6 – 3	1.6 – 3
Mn	1 – 3.5	0.5 – 2	1 – 2
P	0.001 – 0.02	0.001 – 0.1	0.001 – 0.02
Ni	0	0 – 0.5	0
Mg	0.05 – 1.5	0 – 3	0.05 – 1.5
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Nishi et al. ('736) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel, and magnesium for an aluminum alloy from the amounts disclosed by Nishi et al. ('736) because Nishi et al. ('736) disclose the same utility throughout the disclosed ranges.

With respect to the recitation “wherein the total amount of the combination of iron and manganese is 3.0% by mass or greater” as in lines 7-8 of claim 6, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, *Takalatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron and manganese would appear to

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require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron and manganese from the aluminum alloys disclosed by Nishi et al. ('736) because Nishi et al. ('736) teach the same utility throughout the disclosed ranges.

With respect to the recitation "said aluminum alloy having a Young's modulus of 90 GPa or more and a coefficient of linear thermal expansion of $18 \times 10^{-6}/^{\circ}\text{C}$ or less" as recited in lines 7-9 of claim 6, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

In regards to claim 7, Nishi et al. ('736) disclose aluminum alloys having a composition relative to that of the instant invention as shown in the table below (col. 1, lines 58-68, col. 2, lines 58-63 and col. 3, lines 6-14).

Element	From Instant Claims (mass percent)	Nishi et al. ('736) (mass percent)	Overlap (mass percent)
Si	13 – 25	13.5 – 20	13.5 – 20
Cu	2 – 8	6 – 9	6 – 8
Fe	0.5 – 3	1.6 – 3	1.6 – 3
Mn	1 – 3.5	0.5 – 2	1 – 2
P	0.001 – 0.02	0.001 – 0.1	0.001 – 0.02
Ni	0.5 – 6	0 – 0.5	0.5
Mg	0.05 – 1.5	0 – 3	0.05 – 1.5
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Nishi et al. ('736) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the

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art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel and magnesium for an aluminum alloy from the amounts disclosed by Nishi et al. ('736) because Nishi et al. ('736) disclose the same utility throughout the disclosed ranges.

With respect to the recitation “wherein the total amount of the combination of Iron and manganese is 3.0% by mass or greater” as in lines 7-8 of claim 7, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, *Takalatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Nishi et al. ('736) because Nishi et al. ('736) teach the same utility throughout the disclosed ranges.

With respect to the recitation “said aluminum alloy having a Young’s modulus of 90 GPa or more and a coefficient of linear thermal expansion of $18 \times 10^{-6}/^{\circ}\text{C}$ or less” as recited in lines 8-10 of claim 7, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

Claims 5 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horikawa et al. (JP 2000-204428A).

In regards to claim 5, Horikawa et al. (JP '428) disclose aluminum alloys having a composition relative to that of the instant invention as shown in the table below (abstract, [0007] and [0010]).

Element	From Instant Claims (mass percent)	Horikawa et al. (JP '428) (mass percent)	Overlap (mass percent)
Si	13 – 25	11 – 16	13 – 16
Cu	2 – 8	3 – 7	3 – 7
Fe	0.5 – 3	0.2 – 1.5	0.5 – 1.5
Mn	1 – 3.5	0.2 – 1	1
P	0.001 – 0.02	0.003 – 0.015	0.003 – 0.015
Ni	0.5 – 6	3 – 7	3 – 6
Mg	-	0.5 – 2.0	-
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Horikawa et al. (JP '428) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, and nickel for an aluminum alloy from the amounts disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) disclose the same utility throughout the disclosed ranges.

With respect to the language "consisting of" and the 0.5 to 2.0 weight percent magnesium as disclosed by Horikawa et al. (JP '428), the Examiner notes that Horikawa et al. (JP '428) disclose that 0.5 to 2.0 weight percent present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the

0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

With respect to the recitation “wherein the total amount of the combination of iron, manganese, and nickel is 3.0% by mass or greater” as in lines 5-6 of claim 5, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, *Takalatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) teach the same utility throughout the disclosed ranges.

With respect to the recitation “said aluminum alloy having a Young’s modulus of 90 GPa or more and a coefficient of linear thermal expansion of $18 \times 10^{-6}/^{\circ}\text{C}$ or less” as recited in lines 5-8 of claim 5, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

In regards to claim 7, Horikawa et al. (JP '428) disclose aluminum alloys having a composition relative to that of the instant invention as shown in the table on the following page (abstract, [0007] and [0010]).

Element	From Instant Claims (mass percent)	Horikawa et al. (JP '428) (mass percent)	Overlap (mass percent)
Si	13 – 25	11 – 16	13 – 16
Cu	2 – 8	3 – 7	3 – 7
Fe	0.5 – 3	0.2 – 1.5	0.5 – 1.5
Mn	1 – 3.5	0.2 – 1	1
P	0.001 – 0.02	0.003 – 0.015	0.003 – 0.015
Ni	0.5 – 6	3 – 7	3 – 6
Cr	0.1 – 1.0	0.01 – 0.3	0.1 – 0.3
Mg	-	0.5 – 2.0	-
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Horikawa et al. (JP '428) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel, chromium and magnesium for an aluminum alloy from the amounts disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) disclose the same utility throughout the disclosed ranges.

With respect to the language “consisting of” and the 0.5 to 2.0 weight percent magnesium as disclosed by Horikawa et al. (JP '428), the Examiner notes that Horikawa et al. (JP '428) disclose that 0.5 to 2.0 weight percent present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the 0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

With respect to the recitation “wherein the total amount of the combination of

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Iron and manganese is 3.0% by mass or greater” as in lines 7-8 of claim 7, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, *Takalatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron and manganese would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron and manganese from the aluminum alloys disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) teach the same utility throughout the disclosed ranges.

With respect to the recitation “said aluminum alloy having a Young’s modulus of 90 GPa or more and a coefficient of linear thermal expansion of $18 \times 10^{-6}/^{\circ}\text{C}$ or less” as recited in lines 8-10 of claim 7, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

In regards to claim 8, Horikawa et al. (JP '428) disclose aluminum alloys having a composition relative to that of the instant invention as shown in the table below (abstract, [0007] and [0010]).

Element	From Instant Claims (mass percent)	Horikawa et al. (JP '428) (mass percent)	Overlap (mass percent)
Si	13 – 25	11 – 16	13 – 16
Cu	2 – 8	3 – 7	3 – 7
Fe	0.5 – 3	0.2 – 1.5	0.5 – 1.5

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Mn	1 – 3.5	0.2 – 1	1
P	0.001 – 0.02	0.003 – 0.015	0.003 – 0.015
Ni	0.5 – 6	3 – 7	3 – 6
Cr	0.1 – 1.0	0.01 – 0.3	0.1 – 0.3
Mg	-	0.5 – 2.0	-
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Horikawa et al. (JP '428) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel and chromium for an aluminum alloy from the amounts disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) disclose the same utility throughout the disclosed ranges.

With respect to the language “consisting of” and the 0.5 to 2.0 weight percent magnesium as disclosed by Horikawa et al. (JP '428), the Examiner notes that Horikawa et al. (JP '428) disclose that 0.5 to 2.0 weight percent present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the 0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

With respect to the recitation “wherein the total amount of the combination of iron, manganese, and nickel is 3.0% by mass or greater” as in lines 5-6 of claim 8, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, *Takalatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re*

Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) teach the same utility throughout the disclosed ranges.

With respect to the recitation “said aluminum alloy having a Young’s modulus of 90 GPa or more and a coefficient of linear thermal expansion of $18 \times 10^{-6}/^{\circ}\text{C}$ or less” as recited in lines 6-7 of claim 7, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

In regards to claim 9, Horikawa et al. (JP '428) disclose aluminum alloys having a composition relative to that of the instant invention as shown in the table on the following page (abstract, [0007] and [0010]).

Element	From Instant Claims (mass percent)	Horikawa et al. (JP '428) (mass percent)	Overlap (mass percent)
Si	13 – 25	11 – 16	13 – 16
Cu	2 – 8	3 – 7	3 – 7
Fe	0.5 – 3	0.2 – 1.5	0.5 – 1.5
Mn	1– 3.5	0.2 – 1	1
P	0.001 – 0.02	0.003 – 0.015	0.003 – 0.015
Ni	0.5 – 6	3 – 7	3 – 6
Cr	0.1 – 1.0	0.01 – 0.3	0.1 – 0.3
Mg	-	0.5 – 2.0	-
Al	balance	balance	balance

The Examiner notes that the aluminum alloy composition disclosed by Horikawa et al. (JP '428) overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of silicon, copper, iron, manganese, phosphorus, nickel, chromium and magnesium for an aluminum alloy from the amounts disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) disclose the same utility throughout the disclosed ranges.

With respect to the language "consisting of" and the 0.5 to 2.0 weight percent magnesium as disclosed by Horikawa et al. (JP '428), the Examiner notes that Horikawa et al. (JP '428) disclose that 0.5 to 2.0 weight percent present in the aluminum alloy would remarkably improve mechanical strength [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the 0.5 to 2.0 weight percent magnesium where remarkable mechanical strength would not be required or desired. MPEP 2144.04 (II) and 2123 (II).

With respect to the recitation "wherein the total amount of the combination of iron, manganese, and nickel is 3.0% by mass or greater" as in lines 7-8 of claim 9, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, *Takalatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of iron, manganese, and nickel would appear to require no more than routine investigation by those of ordinary skill in the art. *In re*

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Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of iron, manganese, and nickel from the aluminum alloys disclosed by Horikawa et al. (JP '428) because Horikawa et al. (JP '428) teach the same utility throughout the disclosed ranges.

With respect to the recitation "said aluminum alloy having a Young's modulus of 90 GPa or more and a coefficient of linear thermal expansion of $18 \times 10^{-6}/^{\circ}\text{C}$ or less" as recited in lines 8-10 of claim 9, the Examiner notes that the composition disclosed by Nishi et al. ('736) would be the same or substantially similar to that of the instant invention. Therefore, these properties would be expected. MPEP 2112.01 I.

Response to Arguments

Applicant's arguments filed 15 July 2008 have been fully considered but they are not persuasive.

The Applicant primarily argues that "Any prima facie case of obviousness based on the cited prior art is rebutted by the significant improvement in Young's modulus of 90 GPa or more, linear thermal expansion coefficient to $18 \times 10^{-6}/^{\circ}\text{C}$ or less, and reduced sticking to a die over the ranges featured in the claims of '1-3.5% by mass of manganese' and '0.5-3% by mass of iron'."

In response, the Examiner first notes that the instant specification provides support for the range of 0.3 to 3 weight percent manganese and 3.5 weight percent manganese (i.e. [0005] and Table 1). However, the instant specification does not provide support for greater than 3 weight percent to less than 3.5 weight percent

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manganese as would be included by the scope of instant claims 4-9. Second, the Applicant has not provided any technical evidence to show that the Young's modulus of 90 GPa or more, linear thermal expansion coefficient to $18 \times 10^{-6}/^{\circ}\text{C}$ or less would not be expected in the cited prior art references. Evidence of unexpected properties may be in the form of a direct or indirect comparison of the claimed invention with the closest prior art which is commensurate in scope with the claims. MPEP 716.02(b)(III).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/John P. Sheehan/
Primary Examiner, Art Unit 1793

JR

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	10/593,338	ODA ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1793	